

## REMARKS

Claims 1-17 are pending in the present application. Claims 1-4, 6, 8, 9, and 12-14 have been amended, and claim 17 has been added herein. No new matter has been added. Applicants respectfully request reconsideration of the claims in view of the following remarks.

Independent claim 1 has been rejected under 35 U.S.C. § 103(a) as being unpatentable over Kenan, *et al.* (U.S. Patent No. 7,133,548 B2, hereinafter "Kenan") in combination with Laidig, *et al.* (U.S. Patent No. 7,175,940 B2, hereinafter "Laidig") and Crell (U.S. Patent No. 6,970,589 B2, hereinafter "Crell"). Independent claims 9, 12 and 13 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Kenan in combination with Laidig and Crell and further in view of Lehman (U.S. Patent Publication No. 2003/0048939 A1, hereinafter "Lehman"). The dependent claims have been rejected as being unpatentable over Kenan in combination with one or both of Laidig and Crell, and in view of Lehman or other additional references. Applicants respectfully traverse these rejections.

Claim 1, as currently amended, specifically recites that "the correction data record [includes] information related to errors in the measuring system arising from the illumination and the detector systems." Kenan, either singly or in combination with Laidig and/or Crell, and in view of Lehman, does not teach or suggest a correction data record including information related to errors in the measuring system arising from the illumination and the detector systems. Rather, all the disclosures relate to the detection and measurement of (a) errors in placing features on the reticle or mask (mismatch

between target mask and actual mask), and/or (b) optical proximity effect. The mask is not part of the illumination or detector system, and is in fact not part of an optical system.

Examiner incorrectly applied Laidig, which teaches in the field of correcting optical proximity effects. Office Action mailed April 10, 2008, page 4. Optical proximity effects, as the name suggests, relate to mismatch between features on the reticle and the imaged feature on a photo resist due to the proximity of features on the reticle. Further, optical proximity effect is not an error but is rather a well reproducible and established physical phenomenon due to optical diffraction. In particular, in optical proximity effect, optical diffraction varies with the physical proximity of features on a reticle.

Claim 1 also specifically recites “combining measurement results associated with the measured optical properties with the correction data record to produce a corrected measurement result.” None of the prior art disclosures teach or suggest this limitation. On page 5 of the Office Action, Examiner has cited Crell. However, Crell does not teach *combining* measured results with a correction data record. Rather, Crell teaches *comparing* an image of interest with a reference image, the reference image being produced in parallel, in real time, along with the image of interest. See, for example, the abstract of Crell. Further, even for the comparison process, Crell teaches away from storing data. See, e.g., Crell, column 3, lines 65-68.

Clearly, none of the disclosures teach or suggest the limitations of claim 1. Hence, independent claim 1 is allowable.

Claims 2-8 and 14-16 depend from claim 1 and add further limitations. It is respectfully submitted that these claims are allowable over the references of record in view of their dependence on an allowable claim as well as for their additional limitations.

Claim 9, as currently amended, specifically recites that "the selected correction data record [includes] information related to errors in illumination and detector systems of the measuring system." Further, claim 9, as currently amended, further specifically recites "means for combining measurement results of the optically measurable properties of the mask with the correction data record associated with the mask to produce a corrected measurement result." As discussed above with respect to claim 1, none of the prior art disclosures teach or suggest a correction data record that includes errors in illumination and detector systems, and means for combining measurement results with the correction data record.

Claims 10 and 11 depend from claim 9 and add further limitations. It is respectfully submitted that these claims are allowable over the references of record in view of their dependence on an allowable claim as well as for their additional limitations.

Claim 12 specifically recites that "the correction data record includes information for correction of inhomogeneities of an illumination system." As discussed with respect to claim 1, none of the prior art disclosures teach or suggest a correction data record that includes information for the correction of inhomogeneities of an illumination system. The Examiner incorrectly recites Laidig, which teaches in the field of correcting optical proximity effects. Office Action mailed April 10, 2008, page 14. Optical proximity effects, as the name suggests, relate to mismatch between features on the reticle and the

imaged feature on a photo resist due to the proximity of features on the reticle. Hence, independent claim 12 is allowable.

Claim 13 specifically recites that “the correction data record includes information for correction of inhomogeneities of an illumination system.” As discussed with respect to claims 1 and 12, this limitation is not taught by the prior art. Hence, independent claim 13 is allowable.

New claim 17 specifically recites that “the projected light [comprises] a first error” and “the detector system [adds] a second error to the measurement result.” Further, new claim 17 specifically recites “correcting the measurement result by removing the first and the second errors.” This limitation is not taught or suggested by the prior art. Hence, new claim 17 is allowable.

Applicants have made a diligent effort to place the claims in condition for allowance. However, should there remain unresolved issues that require adverse action, it is respectfully requested that the Examiner telephone Ira S. Matsil, Applicants' attorney, at 972-732-1001, so that such issues may be resolved as expeditiously as possible. The Commissioner is hereby authorized to charge any fees that are due, or credit any overpayment, to Deposit Account No. 50-1065.

Respectfully submitted,



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7/15/08  
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